

LAW OFFICES
McGuireWoods LLP
1750 TYSONS BOULEVARD, SUITE 1800
MCLEAN, VIRGINIA 22102

APPLICATION
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Applicants: Patrick E. Patterson
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TRACKING ELECTRONIC CONTENT

Technical Field

5 This invention relates to tracking electronic content, for example, content included with or attached to an electronic mail message.

Background

10 Electronic mail (e-mail) enables computer users to conveniently share information. Frequently, however, network packets carrying e-mail are dropped due to network traffic or physical transmission problems. Even when successfully delivered, recipients sometimes delete or otherwise fail to read received e-mail. Thus, a user
15 sending e-mail often cannot not be sure the intended recipient ever read or received the e-mail.

 Some e-mail software packages, such as cc:Mail™ available from Lotus™ Corporation of Cambridge, Massachusetts, provide a "return receipt" option when
20 sending e-mail. E-mail software that receives e-mail specifying "return receipt" can automatically send back a receipt message indicating that the intended recipient received the e-mail. Some software packages permit an administrator or user to disable "return receipt" functions
25 and, thus, prevent transmission of receipts back to e-mail senders.

 E-mail contents can include text messages entered in an e-mail editor and/or attachment files (attachments). Recent surveys indicate that more than 50% of information
30 transmitted via e-mail is transmitted in the form of attachments. Many e-mail software packages enable a user receiving an e-mail attachment to easily forward received

attachments to other recipients. Thus, an attachment may be quickly disseminated to a large number of individuals unknown to the user originally sending the attachment.

Summary of the Invention

5 In general, in one aspect, a method of tracking electronic content includes producing a file that includes electronic content and executable instructions. The executable instructions collect notification information and attempt to transmit the notification information to an
10 address when triggered by an event. The executable instructions deny access to the electronic content until the notification information is transmitted successfully.

 Embodiments may include one or more of the following. The executable instructions may deny access
15 until an access granting message is received in response to the successful transmission of notification information. The trigger event may include an attempt to access (e.g., view, use, or list) the electronic content, for example, from a computer or user that has not previously accessed the
20 electronic content.

 The executable instructions may collect notification information by querying a computer and/or interactively collecting information from a user. Such information may include demographic information (e.g., a name, an e-mail
25 address, and an organization identifier) or system information (e.g., a network address).

 The electronic content may be encrypted. Encrypted content may be accompanied by instructions decrypt the content. The electronic content may be compressed.
30 Compressed content may be accompanied by instructions that decompress the content. The electronic content may include at least one file of data, text, graphics, audio, video, or

an executable instructions. The file may be transmitted via e-mail (e.g., as an e-mail attachment).

5 The method may further include determining an address to receive the notification information. Such determining may performed by interactively receiving an address from a user. Such determining also may be determined by automatically identifying the address as the address of the user creating the file.

10 The executable instructions that transmit notification information may dynamically determine how to transmit the notification information via an intermediate device (e.g., a proxy server and a firewall).

15 In general, in another aspect, a method of tracking access to electronic content includes encrypting electronic content, determining an address for receipt of notification information, and producing a file that includes the encrypted electronic content, and executable instructions. The executable instructions collect notification information and attempt to transmit the notification information to the
20 determined address in response to an attempt to access the electronic content on a computer that has not previously accessed the electronic content. The notification instructions decrypt the encrypted electronic content after transmitting notification information successfully.

25 In general, in another aspect, a method for tracking access to electronic content includes receiving notification information from a recipient of a file including electronic content, the notification information being transmitted in response to an attempt to access the electronic content.
30 The notification information includes an identifier that identifies a user or computer system. The method also includes determining an address for receipt of the

notification information and transmitting the notification information to the determined address.

Embodiments may include one or more of the following. An access granting message may be transmitted.

5 The identifier that identifies a user or computer system included in the notification information may be used to verify that an authorized user produced the file. The identifier may also be used to update information (e.g., a usage charge) corresponding to the identifier.

10 In general, in another aspect, a computer-implemented method of regulating access to electronic content includes collecting notification information in response to an attempt to access the electronic content, attempting to transmit the collected
15 notification information to an address, and selectively granting access to the electronic content based on a result of the attempted transmission of the notification information.

In general, in another aspect, a method of tracking
20 access to electronic content includes creating a file that includes electronic content and causes access to the electronic content to be denied until notification information has been successfully transmitted. The method also includes transmitting the file to a set of addresses
25 that includes at least one address and receiving notification information.

In general, in another aspect, a computer-implemented method of regulating access to e-mail includes detecting an attempt by a message recipient to
30 access received e-mail, attempting to collect notification information from the recipient, and selectively granting access to the e-mail based on a result of the attempt to collect notification information.

In general, in another aspect, a computer program, disposed on a computer readable medium, tracks electronic content. The computer program including computer program instructions for causing a computer to produce a file that
5 includes electronic content and executable instructions that collect notification information and attempt to transmit the notification information to an address when triggered by an event. The executable instructions deny access to the electronic content until the notification information is
10 transmitted successfully.

In general, in another aspect, a computer program, disposed on a computer readable medium, regulates access to electronic content. The computer program includes instructions for causing a processor to collect notification
15 information in response to an attempt to access the electronic content, attempt to transmit the collected notification information to an address, and selectively grant access to the electronic content based on a result of the attempted transmission of the notification information.

20 Advantages include one or more of the following.

Transmitting electronic content in envelopes permits access to electronic content to be tracked in perpetuity. That is, regardless of how an envelope is passed on by different recipients, the envelope creator, or a user
25 designated by the envelope creator, receives notification information describing each recipient who attempts to access the electronic content in the envelope.

By including its own set of executable instructions the envelope can be used by existing e-mail software
30 packages without modification. Additionally, the executable instructions, for example, those that dynamically determine how to reach a network through intermediate devices (e.g., a firewall), make the task of preventing transmission of

notification information extremely difficult without completely severing a network connection.

5 The notification information provided by an envelope can include any information that can be acquired by querying a computer system or user. The information collected can provide valuable marketing data describing the attributes of users accessing the electronic content.

10 Receipt of notification information not only communicates receipt of a file but also of attempted access or other attempted functions (e.g., printing, saving, and deleting).

15 The use of a notification server enables envelopes to control access to electronic content, for example, by limiting the number of times a particular user can access electronic content.

Other advantages of the invention will become apparent in view of the following description, including the figures, and the claims.

Description of the Drawings

20 FIG. 1 is a diagram of an envelope.

FIG. 2A-2D are diagrams illustrating transmission of notification information.

FIG. 3 is a flow chart of a procedure for creating envelopes.

25 FIG. 4 is a flow chart of a procedure for controlling access to electronic content based on successful transmission of notification information.

FIG. 5 is a flow chart of a procedure for transmitting notification information.

30 FIGS. 6A-6J are screenshots of envelope creation and use.

FIG. 7 is a diagram of a computer platform.

Detailed Description

Referring to FIG. 1, an envelope file 100 (envelope) includes electronic content 105 (e.g., data, text, graphics, audio, video, or executable instructions) and executable notification instructions 110 that control and report access to the electronic content 105. The envelope file 100 may be transmitted to other users or computers, for example, as an attachment to an e-mail message. The envelope 100 may also be transmitted via a network service such as FTP (File Transfer Protocol) or HTTP (HyperText Transfer Protocol) or other mechanisms such as physical transfer of a floppy disk storing the envelope or a direct modem connection between computers. A recipient of the envelope 100 may attempt to access (e.g., view, use, or list) content 105 included in the envelope 100. The notification instructions 110 included in the envelope 100 may respond to the access attempt by collecting notification information (e.g., a user name) and attempting to transmit the collected information to a network address designated during envelope 100 creation. The notification instructions 110 may be configured during creation of the envelope 115 to grant or deny access to the electronic content 105 based on the results of the attempted transmission of the notification information 140.

The executable notification instructions 110 included in an envelope 100 may include computer platform-specific instructions. For example, an envelope 100 may include binary instructions 110 that program any PC-compatible computer. The executable instructions, however, need not be targeted to a particular computer platform. For example, the instructions 110 may be Java commands. The executable instructions are placed in the envelope 100 such that an attempt to execute the envelope file 100 (e.g., "C:\

envelope.exe") causes execution of the executable instructions.

Referring to FIG. 2A, an envelope 100 may be transmitted from an envelope creator 120 to an envelope recipient 125, for example, by including the envelope 100 as an attachment to an e-mail message 115a. Attempted access to the content of the envelope 100 by the recipient 125 causes execution of the notification instructions 110 of the envelope that collect and transmit notification information 130a from the recipient 125 to the envelope creator 120. Such information 130a may include system information (e.g., a network address and/or other data stored on a system) and/or demographic information such as a user's name, e-mail address, street address, and/or organization. The envelope creator 120 and recipient 125 may use the same or different computer systems.

Including an envelope 100 as an e-mail attachment 115a offers an envelope creator 120 a "certified receipt" functionality that transmits notification information 130a indicating that not only has a recipient received the envelope 100, but that the recipient has also accessed (or attempt to access) the envelope contents 105. The notification instructions 110 included in the envelope 100 can be configured during creation to report events other than attempted access to envelope contents 105 such as an attempt to save contents 105 to a file, an attempt to delete envelope contents 105, and/or an attempt to print envelope contents 105. For example, the notification instructions 110 may monitor viewing of electronic content 105 and transmit notification information 130a that summarizes the viewing (e.g., which pages of a document were read) when viewing ends.

An envelope 100 can be included as an e-mail attachment 115a using any e-mail software package that supports attachments (e.g., Lotus™ cc:Mail™, Microsoft™ Exchange, and Eudora). Because the envelope 100 includes its own independently executable notification instructions 110 that control electronic content 105 access and transmission of notification information 130a, 130b, the envelope 100 provides a notification mechanism independent of the capabilities of any particular e-mail software package. This independence offers a number of benefits. For example, because the functionality provided by an envelope 100 is independent of the e-mail package used to transmit or receive e-mail, users can continue to use an e-mail package of their choice without modification and still receive notification information 130 from an envelope 100. Additionally, because the envelope 100 need not rely on functions provided by any e-mail software package, defeating the notification scheme implemented by an envelope 100 becomes much more difficult than re-configuring an e-mail software package (e.g., an administrator clicking on a check-box control that prevents transmission of return receipt messages).

Referring to FIG. 2B, after transmission to a recipient 125, the envelope 100 remains a convenient way to transmit electronic content 105 included in the envelope 100 to others. Thus, a recipient 125 can easily re-transmit the received electronic content 105 to one or more new recipients 135 by forwarding the received envelope 100 in a new e-mail message 115b. The notification instructions 110, however, remain packaged with the electronic content 105 in the envelope 115 and continue to control access to the electronic content 105 and transmit notification information 130b collected from the different recipients 135 that

receive the forwarded envelope 100. Thus, the notification instructions 110 collect and transmit notification information 130b to an envelope creator 120 each time a different user or computer accesses the electronic content 105 even though the recipient 135 did not receive the envelope directly from the envelope 100 creator. Thus, the notification information 130a, 130b received by an envelope creator 120 can produce a list of the different users and computers that access a particular envelope's electronic content 105 as an envelope 100 is passed on to different recipients. The information reported can provide invaluable marketing data that tracks the number and demographic attributes of users accessing a particular set of electronic content 105.

Referring to FIG. 2C, an envelope 100 creator may configure the envelope 100 to transmit collected notification information 130a, 130b to an address 137 other than the address 120 of the envelope creator 120. Additionally, the envelope 100 creator can configure the envelope 100 to broadcast the notification information 100 to may different addresses (not shown).

Referring to FIG. 2D, the notification instructions 110 included in an envelope 100 may transmit notification information 130a via a notification server 134 instead of directly to an address 120 designated during envelope creation. The notification instructions 110 may be configured to deny access until an access granting message 132 is received from the notification server 134. The notification server 134 may automatically transmit an access granting message 132 upon receipt of notification information 130a. Alternatively, the notification server 134 may process the notification information 130a before transmitting an access granting message 132. The use of a

notification server 134 to transmit access granting messages
136 provides a method of controlling access (e.g., limiting
the number of people who can access an envelope 100) without
requiring server software to continually run on an envelope
5 creator's computer.

The notification server 134 may include a table 136
that enables the server 134 to track use of envelopes and/or
envelope production software. The table 136 can include
information describing users of the envelope production
10 software. For example, the table 136 can store identifiers
corresponding to authorized envelope creators. The table
136 can also store information describing particular
envelopes by storing envelope IDs as they are received.

To facilitate use of a notification server 134, each
15 envelope 100 may include an identifier indicating the user
or computer system 120 that created the envelope 100, the
address of the notification server 134, and the address
specified during envelope creation that ultimately receives
the notification information. The notification server 134
20 can match the identifier included in the notification
information 130a with an identifier in its table 136 to
verify legitimate envelope production or compute usage
charges. The notification server 134 can then re-transmit
the notification information 130a to the address designated
25 by an envelope creator during envelope creation.

Referring to FIG. 3, a procedure 140 produces an
envelope 100. The procedure 140 may prompt (145) an
envelope creator to designate a password for password
protection of the electronic content 105. The notification
30 instructions 110 use the designated password to deny access
to an envelope's 100 electronic contents 105 to a recipient
who fails to provide the designated password. Thus, unless
a recipient receives an envelope's 100 password, for

example, via a phone call or separately transmitted e-mail message, the recipient cannot access the electronic contents 105 of the envelope 100.

After receiving identification (150) of electronic content 105 for inclusion in an envelope 100, the procedure 140 may compress (155) the electronic content 105 to minimize the size (e.g., number of bytes) of the envelope 100 and, thus, speed transmission of the envelope 100 across network lines. The procedure 140 may use any one of a variety of compression algorithms such as PKZip compression. The procedure 140 also may encrypt (160) the electronic content 105 to provide security both during transmission over public network lines and to prevent attempts to bypass the notification instructions 110 and access an envelope's content 105 before successfully transmitting notification information 130a, 130b. The password designated by an envelope creator may act as the encryption key, providing extra protection against unauthorized access. The procedure 140 may use any of a variety of encryption algorithms such as Blowfish, DES (Data Encryption Standard), or PKZip encryption. The terms compression and encryption are not mutually exclusive. That is compressing data (i.e., making the size of an envelope smaller) may also serve to encrypt the data.

The procedure 140 may determine (165) a network address that will receive the notification information 130a, 130b. By default, the procedure 140 may assume that the user executing the envelope producing procedure 140 should receive the notification information 130a, 130b. For example, the procedure 140 may query a system configuration file (e.g., a Windows™ registry) to determine the e-mail address of the envelope creator. However, an envelope

creator may expressly designate a different address at the time the envelope is created.

The procedure 140 may receive other envelope configuring (167) information from an envelope creator. For example, the creator may specify than the envelope 100 need not successfully transmit notification information 130a, 130b before granting access to the envelope's electronic content 105. The creator may even specify that no notification information 130a, 130b should ever be transmitted by the envelope 100.

The procedure 140 then builds (170) the envelope 100 to include data corresponding to the identified electronic content 105 and notification instructions 110. The notification instructions 110 included in the envelope 100 may vary depending on the envelope's 100 specified configuration. For example, an envelope 100 including compressed and encrypted data corresponding to the electronic content 105 may include notification instructions 110 that decompress and decrypt the data 105 when granting access to the content 105.

Other implementations of procedure 140 perform the actions shown in different orders. Further, some implementations omit actions shown. Additionally, other implementations may include different configuration capabilities. For example, an envelope 100 creator may configure the envelope 100 to collect different notification information 130a, 130b.

Referring to FIG. 4, the notification instructions 110 included in an envelope 100 can be configured to control access to the electronic content 105. Typically, an envelope 100 will include compressed and/or encrypted electronic content 105. Further, different electronic content 105 included in an envelope may use different file

formats (e.g., electronic content may include a JPEG file and a file that includes sound data). Thus, an envelope recipient usually cannot easily access the electronic content 105 by direct examination. Instead, the recipient
5 must execute the notification instructions 110 of an envelope 115 to gain access (e.g., extract the electronic content 105 from the envelope). For example, a recipient may save an envelope 100 received as an attachment as a file and execute the file using platform specific commands (e.g.,
10 "C:\ envelope.exe"). Many e-mail packages, such as cc:Mail™, can launch executable files from within the e-mail package.

When executed, notification instructions 110 can determine (175) whether a previous attempt to access the
15 electronic content 105 resulted in success (e.g., success transmission of notification information 130a, 130b or receipt of an access granting message 136). If so, the notification instructions 110 may grant access (195) to the electronic content 105 without re-collecting and/or re-
20 transmitting notification information 130a, 130b. If, however, a previous attempt to access the electronic content 105 did not result in success, the notification instructions 110 attempt to collect (215) and transmit (220) the notification information 130a, 130b.

25 Many different techniques exist for determining (175) whether a previous access attempt resulted in successful. For example, each envelope 100 may include an envelope ID. The envelope ID may be produced during envelope creation by combining a timestamp produced during
30 envelope production with a machine identification code of the computer used to produce the envelope (e.g., a network address). The notification instructions can store (230) the envelope ID on a computer system (e.g., in the registry)

after successful transmission of notification information 140. By examining a computer system for prior storage of an envelope's envelope ID, the instructions 110 can determine (175) whether a previous access attempt succeeded. The
5 determination (175) may be a computer system-based or a user-based inquiry. For example, by storing a user identification code along with the envelope ID, the notification instructions 110 can distinguish between different users of the same computer system. Thus, the
10 notification instructions 110 do not repeatedly require re-transmission of notification information 130a, 130b by users who already have successfully transmitted notification information 140.

If the instructions 110 determine (175) that no
15 previous access attempt succeeded, the instructions 110 collect (215) notification information 130a, 130b. The notification instructions 130 may interactively collect notification information 140 from a recipient through a GUI dialog (see FIG. 6H). The notification instructions 130
20 also may collect information by querying the recipient's computer system. For example, the notification instructions 130 may examine registry information to retrieve a wide variety of system and demographic information.

After collecting (215) the notification information
25 130a, 130b, the notification instructions 110 attempt (220) to transmit the collected notification information 130a, 130b to the address specified during an envelope's creation (165 FIG. 3). An attempt to transmit the notification information 130a, 130b may fail immediately and return a
30 network service error code (e.g., a port timeout error code). Additionally, even though transmission does not result in a network service error, the computer sending the notification information 130a, 130b may not receive a

network acknowledgment message that indicates successful transmission and receipt of the notification information 130a, 130b. Further, notification instructions 110 configured to grant access only upon receipt of an access granting message may fail to receive the access granting message 132 after a period of time. The notification instructions 110 may be configured during envelope creation to deny access based on any of these circumstances, alone or in combination. If, however, the attempted transmission succeeds (225) or an access granting message 136 is received, the notification instructions 110 can store (230) data indicating successful access.

The notification instructions 130 may prompt (180) a recipient for entry of the password, if any, designated during envelope 100 creation (145 FIG. 3). Entry of a correct password (185) can cause the notification instructions 11 to grant (195) access to an envelope's electronic content 105. Granting access may include decompressing and decrypting the electronic content 105. As previously discussed, events other than attempted access may trigger collection and transmission of notification information 130a, 130b. For example, as shown notification information 130a, 130b may be transmitted after entry of an incorrect password (205) or after each successful access to electronic content 105 (200).

Different implementations of the instructions 110 may not perform the same actions or perform actions in the same order as shown. For example, prompting for a password (180) may occur prior to a determination (175) of whether notification information 130a, 130b was successfully transmitted.

Referring to FIG. 5, an envelope's notification instructions 110 have no prior knowledge of the place a

recipient's computer holds in a network configuration. For example, some computers connect directly to a public network (e.g., the Internet) while others connect via intermediate devices such as protective proxy servers or firewalls.

5 Thus, the notification instructions 110 include instructions 220 that dynamically determine how to navigate through a network configuration to a public network. The ability to adapt to different configurations makes it more difficult for an administrator or recipient to prevent transmission of
10 notification information 130a, 130b.

The instructions 220 transmit notification information 130a, 130b by determining how a recipient's computer connects to a network (502). For example, the instructions 220 can check a computer system's registry to
15 see if proxy service is enabled or disabled. If disabled, the instructions 220 can try to transmit notification information via communication ports customarily used for network use (e.g., port 1080 which is typically reserved for Internet communication) (510). If such efforts fail, the
20 instructions may try other commonly used ports or notify the user that transmission was unsuccessful (504).

If proxy service is enabled, notification information 130a, 130b must be sent to the network via an intermediate device. Thus, the instructions 220 attempt to
25 determine the address of the intermediate device (504). For example, the instructions 220 may examine the registry to determine how different network services access the Internet from the computer system. For example, instructions 220 may examine the address stored in a Hkey_Classes_Root/Internet/
30 Netscape/ProxyServer registry entry to see how a Netscape™ browser accesses the Internet through the intermediate device. After determining the address of the intermediate device, the instructions 220 attempt to transmit the

notification information 110 (506) via the determined address. If the transmission fails (508), the instructions 220 may make another attempt using a different registry entry corresponding to a different network service (e.g.,
5 Microsoft™ Explorer). Alternatively, the instructions 220 may query the user for the address of the intermediate device.

Referring to FIGS. 6A-6J, an intuitive graphical user interface facilitates production of an envelope 100
10 from electronic content 105. The interface uses a vault metaphor that presents each envelope 100 as storing electronic contents 105 behind access doors 290a, 290b.

Referring to FIG. 6A, in addition to a menu bar 270, the interface screen 250 includes buttons (e.g., 255) that
15 initiate tasks needed to create an envelope 100. As shown, the interface screen 250 includes a "New" button 255. Selecting the "New" button (e.g., moving a mouse and clicking on the button) initiates creation of a new envelope 100. As shown, a dialog 285 enables an envelope creator to
20 name the new envelope 100 (e.g., "Sample"). A directory of the same name (e.g., "Sample") is created on the user's computer to store files added to the envelope.

Referring to FIG. 6B, an envelope creator has added electronic content 105 including a text file 105a and an
25 Adobe™ PDF file 105b. The user can add electronic content 105a, 105b by selecting an "Add File" button 265 and browsing through system directories and selecting files, by interacting with items in the menu bar 270, or by dragging-and-dropping files into the interface screen 250.

30 Referring to FIG. 6C, after adding electronic content 105a, 105b, the user selects either a "Save to Desktop" button 275 or a "Mail" button 280 to generate an instance of an envelope 100. As shown, a dialog 295 may

prompt the user to designate an envelope password to protect the electronic contents 105a, 105b. As shown in FIG. 6D, a dialog also may request specification of an address 300 for receipt of the notification information 130a, 130b.

5 Selecting the "Mail" button 280 launches a linked e-mail client (e.g., cc:Mail™) and causes it to create a new message having the envelope 100 as an attachment. Then, the user can optionally enter text and/or add other attachments before sending the e-mail message and attachments according
10 to the particular protocol of the e-mail client.

Alternatively, as shown in FIG. 6E, selecting the "Save to Desktop" button saves the envelope 100 to a system desktop 305 or directory. A user can then e-mail the envelope 100 as an attachment by manually including the envelope 100 in
15 an e-mail message. As shown in FIG. 6F, a user has attached an envelope to a Lotus™ cc:Mail™ e-mail message.

As shown in FIG. 6G, after transmission to a recipient, a recipient can attempt to access electronic content 105 in an envelope 115 by interacting with a
20 graphical user interface provided by the notification instructions. Continuing the vault motif, the screen shows a pair of access doors 320a, 320b each having "open" buttons 315a, 315b. The doors 320a, 320b may also include a graphic image (e.g., a panda) or series of images specified by the
25 creator of the envelope 100. Selecting either "open" button 280a, 280b can signify attempted access to the electronic content 105 and thus cause collection and attempted transmission of the notification information 130a, 130b by the notification instructions 110.

30 As shown in FIG. 6H, notification instructions 110 optionally may collect demographic information via a dialog 330 that includes text controls for entry of a person's name 335, e-mail address 340, and organization 345. As

previously described, collection of information may be performed instead of, or in addition to system calls or examination of configuration files.

Referring to FIG. 6I, the envelope creator or other
5 address designated during envelope creation receives an e-mail message containing the notification information.

Referring to FIG. 6J, after successful transmission of the collected notification information, the graphical user interface presents the envelope recipient with a list
10 of the electronic content 105a, 105b included in the envelope 100 during envelope creation. The recipient can view the content, for example, by selecting (e.g., clicking on) an electronic content icon 105a, 105b or can save (e.g., by selecting button 332) the electronic content 105a, 105b
15 to specified files.

Referring to FIG. 7, a computer platform 120 suitable for executing instructions 140 that produce an envelope 100 includes a digital computer 400 having memory 390 and a processor 385. The digital computer 400 also
20 includes a mass storage device 395a (e.g., a hard disk) that includes the instructions 140 for creating an envelope from electronic content. In the course of operation, instructions 140 are transferred from the mass storage device 395a to memory 390 and processor 385 for execution.
25 Of course, a wide variety of mass storage devices such as a floppy disk 395b or a CD-ROM 395c may store the instructions 110.

The computer platform 120 also may include a monitor 360 for displaying the graphical user interface screens 365
30 and electronic content 105. The user may interact with the graphical user interface 365 via a keyboard 375 and/or a pointing device such as a mouse 370. The computer platform

120 also includes a network connection 380 that permits transmission of the executable file to other computers.

Other embodiments are within the scope of the following claims. For example, rather than implementing the instructions that construct an envelope as a stand-alone application, different implementations may integrate the instructions directly into an e-mail software package. Such a e-mail software package expands traditional e-mail packages capabilities beyond receiving a "return receipt" message. For example, these packages can provide mechanisms that regulate access to e-mail content and track access to the e-mail content via notification information received from recipients accessing the content.

In one embodiment, an e-mail system could provide a "certified receipt" feature as a native function. Upon generating an email message, a user could designate (e.g., by using pull-down menu functions or by clicking appropriate check-boxes) that the text of the email message itself, and/or the content of one or more attachments to the email, require "certified receipt" before the recipient could view or otherwise access the content. The message sender optionally could designate the nature and type of notification information to be collected from the recipient, as well as the identity or address of one or more parties that are to receive the notification information.

What is claimed is: